

**AMENDMENTS TO THE DRAWINGS**

FIGS. 2-12 have been amended to include reference numerals. Replacement sheets for FIGS. 1-12 are attached.

### **REMARKS**

Claims 2-21 are currently pending in the application. Applicant has amended Claims 2-4, 8, 10, 14, 19, and 21. Applicant respectfully requests reconsideration of the pending claims in view of the following remarks.

#### **Drawings**

The Examiner objected to the drawings because they do not include any of the reference sign(s) mentioned in the description. Applicant has amended the drawings to include the reference signs.

#### **Claim Rejections – 35 U.S.C. § 112**

The Examiner rejected Claims 2-15 and 19-21 under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner further indicates that these claims recite the limitation “the couch” and that there is insufficient antecedent basis for this limitation in the claims.

Applicant respectfully disagrees with this rejection. The preamble of independent Claims 1 and 19 refer to a couch, and the body of the claim refers back to the couch mentioned in the preamble. Accordingly, Claims 2-15 and 19-21 are not indefinite. Applicant respectfully requests the Examiner to withdraw this rejection.

The Examiner further rejected Claims 3, 4, and 8 under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant has amended Claims 3, 4, and 8 to address this rejection, and respectfully requests the Examiner to withdraw this rejection.

#### **Claim Rejections – 35 U.S.C. § 102**

The Examiner rejected Claims 2-4, 6-9, 11-14, and 16-18 under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 4,736,736 (“Moers”).

Moers does not disclose the subject matter of amended independent Claim 2. More specifically, Moers does not disclose an upper body positioning device connectable to a couch of a radiation therapy treatment system, the upper body positioning device comprising at least the following elements:

(a) a first assembly connectable to a second end of the frame, the first assembly including a vertically-oriented bearing having a first end and a second end, the first end extending through an opening in the frame, the second end of the frame configured to move

along the vertically-oriented bearing to provide a first range of motion of the frame relative to the couch about the pivot point; and

(b) a second assembly including a horizontally-oriented bearing, the second end of the vertically-oriented bearing configured to move along the horizontally-oriented bearing to provide a second range of motion of the frame relative to the couch about the pivot point.

Rather, Moers discloses a cervical traction apparatus including a cradle assembly 10 which is mounted on a base assembly 12. The base assembly includes an upper plate 30 and a lower plate 32. A pivot pin 35 is secured between the two plates whereby upper plate 30 can pivot or rotate horizontally with respect to the lower plate 32 about the pivot pin. The lower plate 32 is secured along track 11 by a pair of slides 24, 26 so that the cradle assembly 10 can be moved along the track when a traction machine is applied to the apparatus.

The cradle assembly 10 is supported on the base assembly 12 by a plurality of slot engaging fittings 40, 42. These fittings 40, 42 are fixed on upper base plate 30 and are engaged in channels 18, 20 formed in shell 16 of the cradle. Slot guides 17, 19 cover a portion of each channel 18, 20 which guides extend over flanges of the slot engaging fittings to hold them in place. These fittings 40, 42 and channels 18, 20 allow the cradle to be rotated about a patient's spinal axis independently of the horizontal plane rotation of the upper plate 30 relative to the lower plate 32.

FIG. 7 of Moers illustrates a means for securing the cervical traction apparatus to a traction machine. In FIG. 7, the track 11 is connected to the traction machine 60 via a universal joint 66 in the form of a ball-in-socket means at the end of the track 11.

The Examiner has identified the first assembly in Moers as including components 17, 18, 19, 20, 40, 42 and the second assembly in Moers as including components 11, 24, 26. The first assembly (17, 18, 19, 20, 40, 42) of Moers does not include a "vertically-oriented bearing having a first end and a second end, the first end extending through an opening in the frame." In addition, the second assembly (11, 24, 26) of Moers does not include "a horizontally-oriented bearing, the second end of the vertically-oriented bearing configured to move along the horizontally-oriented bearing to provide a second range of motion of the frame relative to the couch about the pivot point." None of the components of the first assembly (17, 18, 19, 20, 40, 42) move along the horizontally-oriented bearing of the second assembly (11, 24, 26). Further, the second assembly (11, 24, 26) of Moers does not move about the pivot point, but rather only provides translational motion with respect to the pivot point.

For at least these reasons, Moers does not disclose the subject matter of Claim 2. Accordingly, independent Claim 2 is allowable. Claims 3-15 depend from Claim 2 and are

allowable for at least the reasons Claim 2 is allowable. Claims 3-15 may include additional reasons for patentability not specifically discussed herein.

Moers does not disclose the subject matter of independent Claim 16. More specifically, Moers does not disclose a positioning device comprising at least the following elements:

- (a) a second assembly adapted to move the body part about a second axis oriented perpendicular with respect to the first axis; and
- (b) a third assembly adapted to move the body part about a third axis oriented perpendicular with respect to the first axis and the second axis.

As noted above, the first assembly (17, 18, 19, 20, 40, 42) of Moers provides rotation of the cradle about a patient's spinal axis. If you assume that this is the first axis (e.g., an X axis), then Moers must include a second assembly adapted to move the body part about a second axis that is perpendicular to the first axis (e.g., a Y axis or a Z axis) and a third assembly adapted to move the body part about a third axis that is perpendicular to the first axis and the second axis (e.g., a Y axis or a Z axis). Moers also allows movement of the cradle assembly as shown in FIG. 7 about the universal joint 66, which if you assume is a second axis perpendicular to the first axis (e.g., a Y axis), then Moers must still include another assembly adapted to move the body part about a third axis that is perpendicular to the first axis and the second axis (e.g., a Z axis). This last feature is absent in Moers.

The assembly identified by the components (11, 24, 26) of Moers moves the cradle assembly along the first axis and not perpendicular to the above-identified first axis and second axis.

For at least these reasons, Moers does not disclose the subject matter of Claim 16. Accordingly, independent Claim 16 is allowable. Claims 17-18 depend from Claim 16 and are allowable for at least the reasons Claim 16 is allowable. Claims 17-18 may include additional reasons for patentability not specifically discussed herein.

The Examiner rejected Claims 19 and 21 under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,569,175 ("Chitwood").

Chitwood does not disclose the subject matter of amended independent Claim 19. More specifically, Chitwood does not disclose a positioning device connectable to a couch of a radiation therapy treatment system, the positioning device comprising at least the following elements:

a frame including a component extending from the frame, a first assembly coupled to the frame, a second assembly coupled to the frame, and a third assembly coupled to the frame, the component defining a pivot point remote from the first assembly, the second assembly, and the third assembly, the component and the first assembly configured to provide pitch movement, the component and the second assembly configured to provide yaw movement, and the component and the third assembly configured to provide roll movement of the frame relative to the couch about the pivot point.

Rather, Chitwood discloses a pivotable cervical traction/stretch and neck curve support device 12 including a base portion 14 with an inclined surface 16 for supporting an upper body or torso 18. The device 12 also includes a pivotable table 22 which is pivotally mounted to the base portion 14 by a ball and socket assembly 27. The ball and socket assembly 27 includes a ball 28, a bracket 30 having a socket 32 therein and two control rods 34, 35 threaded through the bracket 30 and having outer knobs 36, 37. The ball 28 is mounted to an upper end 38 of a post 40 which is fixed to a circular base plate 42, which is mounted to the base portion 14. The ball 28 is received in the socket 32 of the bracket 30 and can be rotated within the socket 32 about an X, a Y, and a Z axis.

Chitwood does not disclose a plurality of assemblies coupled to the platform 22 that each in combination with the ball 28 provide pitch movement, yaw movement, and roll movement.

For at least these reasons, Chitwood does not disclose the subject matter of Claim 19. Accordingly, independent Claim 19 is allowable. Claims 20-21 depend from Claim 19 and are allowable for at least the reasons Claim 19 is allowable. Claims 20-21 may include additional reasons for patentability not specifically discussed herein.

#### Claim Rejections – 35 U.S.C. § 103

The Examiner rejected Claims 5 and 10 under 35 U.S.C. § 103 as being unpatentable over Moers in view of U.S. Patent No. 4,924,781 ("Span").

Claims 5 and 10 depend from Claim 2 and are allowable for at least the reasons Claim 2 is allowable. As noted above, Moers does not disclose an upper body positioning device connectable to a couch of a radiation therapy treatment system, the upper body positioning device comprising at least the following elements:

(a) a first assembly connectable to a second end of the frame, the first assembly including a vertically-oriented bearing having a first end and a second end, the first end extending through an opening in the frame, the second end of the frame configured to move

along the vertically-oriented bearing to provide a first range of motion of the frame relative to the couch about the pivot point; and

(b) a second assembly including a horizontally-oriented bearing, the second end of the vertically-oriented bearing configured to move along the horizontally-oriented bearing to provide a second range of motion of the frame relative to the couch about the pivot point.

Span does not cure the deficiencies of Moers. Span does not disclose an upper body positioning device connectable to a couch of a radiation therapy treatment system, the upper body positioning device comprising at least the following elements:

(a) a first assembly connectable to a second end of the frame, the first assembly including a vertically-oriented bearing having a first end and a second end, the first end extending through an opening in the frame, the second end of the frame configured to move along the vertically-oriented bearing to provide a first range of motion of the frame relative to the couch about the pivot point; and

(b) a second assembly including a horizontally-oriented bearing, the second end of the vertically-oriented bearing configured to move along the horizontally-oriented bearing to provide a second range of motion of the frame relative to the couch about the pivot point.

Rather, Span discloses a patient support system for irradiation therapy. The system includes a main arm 1 connected to a subfloor mounted pivot 10 and rotatable about a first vertical axis 17, a supporting arm 49 rotatable about a second vertical axis 16, and a vertical pillar 4 pivotable about a third vertical axis 15.

Span does not disclose the structure as specified in elements (a) and (b) as noted above. In addition, movement of the patient support system is very different than movement of a frame that is "connectable to a couch of a radiation therapy treatment system."

For at least these reasons, Moers and Span do not disclose the subject matter of Claim 2. Accordingly, Claims 5 and 10 are allowable.

The Examiner rejected Claim 15 under 35 U.S.C. § 103 as being unpatentable over Moers in view of U.S. Patent No. 6,315,783 ("Katz").

Claim 15 depends from Claim 2 and is allowable for at least the reasons Claim 2 is allowable. As noted above, Moers does not disclose an upper body positioning device connectable to a couch of a radiation therapy treatment system, the upper body positioning device comprising at least the following elements:

(a) a first assembly connectable to a second end of the frame, the first assembly including a vertically-oriented bearing having a first end and a second end, the first end extending through an opening in the frame, the second end of the frame configured to move along the vertically-oriented bearing to provide a first range of motion of the frame relative to the couch about the pivot point; and

(b) a second assembly including a horizontally-oriented bearing, the second end of the vertically-oriented bearing configured to move along the horizontally-oriented bearing to provide a second range of motion of the frame relative to the couch about the pivot point.

Katz does not cure the deficiencies of Moers. Katz does not disclose an upper body positioning device connectable to a couch of a radiation therapy treatment system, the upper body positioning device comprising at least the following elements:

(a) a first assembly connectable to a second end of the frame, the first assembly including a vertically-oriented bearing having a first end and a second end, the first end extending through an opening in the frame, the second end of the frame configured to move along the vertically-oriented bearing to provide a first range of motion of the frame relative to the couch about the pivot point; and

(b) a second assembly including a horizontally-oriented bearing, the second end of the vertically-oriented bearing configured to move along the horizontally-oriented bearing to provide a second range of motion of the frame relative to the couch about the pivot point.

Rather, Katz discloses a surgical head support 1 for positioning and holding a patient's head during a surgical procedure in the head area. The head support 1 includes a head holder system 10 and a leverage system 100 adapted to support the head holder system and connect it to a surgery table. Katz does not disclose the structure as specified in elements (a) and (b) as noted above.

For at least these reasons, Moers and Katz do not disclose the subject matter of Claim 2. Accordingly, Claim 15 is allowable.

The Examiner rejected Claim 20 under 35 U.S.C. § 103 as being unpatentable over Chitwood in view of Moers.

Claim 20 depends from Claim 19 and is allowable for at least the reasons Claim 19 is allowable. As noted above, Chitwood does not disclose a positioning device connectable to a couch of a radiation therapy treatment system, the positioning device comprising at least the following elements:

a frame including a component extending from the frame, a first assembly coupled to the frame, a second assembly coupled to the frame, and a third assembly coupled to the frame, the component defining a pivot point remote from the first assembly, the second assembly, and the third assembly, the component and the first assembly configured to provide pitch movement, the component and the second assembly configured to provide yaw movement, and the component and the third assembly configured to provide roll movement of the frame relative to the couch about the pivot point.

Moers does not cure the deficiencies of Chitwood. Moers, as described above with respect to Claim 2, does not disclose a plurality of assemblies coupled to the cradle assembly 10 that each in combination with the universal socket joint 66 provide pitch movement, yaw movement, and roll movement.

For at least these reasons, Chitwood and Moers do not disclose the subject matter of Claim 19. Accordingly, Claim 20 is allowable.

#### **CONCLUSION**

In view of the foregoing, entry of this Amendment and allowance of the pending claims are respectfully requested. The undersigned is available for telephone consultation during normal business hours.

Respectfully submitted,

/julie a. haut/

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